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Contribution from the Bureau of Markets
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MARKETING BERRIES AND CHERRIES BY PARCEL POST.

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WHILE BERRIES AND CHERRIES are grown to some extent in all States and are shipped in carload lots from a large number of stations in 30 or more States, both producers and consumers are sometimes dissatisfied with the existing methods of marketing and distributing these fruits. Poor returns are often received for berries of good quality because of a reported glut in the market. Most growers believe that often there is no reason for glutted markets for berries and cherries of good quality and appearance, and thus they become dissatisfied with marketing conditions. Growers who must ship from points where berries are not grown in sufficient quantities to be marketed in carload lots often receive unsatisfactory returns because their fruit must be shipped without refrigeration and is sold in competition with that which is shipped from other points in refrigerator cars. While the larger part of some of the berry crops must be transported in carload lots, the agitation for direct marketing has caused many persons to become interested in the possibilities of marketing berries and cherries by parcel post. The publicity that has been given the farm-to-table campaigns conducted by postmasters in many cities has stimulated this interest.

During the season of 1915 the Bureau of Markets of the United States Department of Agriculture, in cooperation with the Post Office Department, began an investigation of shipping berries and

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cherries by parcel post, and many experimental shipments of strawberries, blackberries, huckleberries, raspberries, and cherries have been made This work was planned for the purpose of ascertaining whether berries and cherries could be shipped in commercial crates by parcel post, and also to determine the various factors that operate for and against the successful shipping of these fruits through the mail.

Most of the shipments were made to the Bureau of Markets from points within the first and second postal zones, which include the territory within a radius of approximately 150 miles. Few shipments were made from other zones, as most of the farm produce that will be shipped by parcel post from producers direct to consumers will not be sent beyond the second zone. Sending perishable mail matter to points beyond the second zone often is impracticable because of the higher rate of postage and the increased distance.

Inasmuch as strawberries are the most important of the small fruits, the experimental shipments that were made of this fruit were more numerous than those made of any of the other berries or of cherries. While it is realized that the experimental shipments of some of the berries were small in number and that the varying conditions make it difficult to draw definite conclusions, it is believed that sufficient work was done under enough different conditions to warrant the suggestions and conclusions here given.

STRAWBERRIES.

During three seasons 485 shipments of strawberries were made in crates of various types and sizes. The shipments totaled 9,126 quarts of 17 varieties of strawberries. On an average the berries were shipped 200 miles, while the average length of time between mailing and receipt of the shipments exceeded 20 hours. The cooperation of 63 growers located at 41 stations in 5 States was secured. Representatives from the Bureau of Markets visited these growers and observed the methods of picking, packing, and hauling the berries. Data were secured as to the time the berries were picked, the amount of handling in picking and packing, the date and hour of shipment, the weather conditions, the size of the crate, and the weight of the shipment. When the shipments were received at the Bureau of Markets the berries were examined carefully and records were made of the weight of each shipment, the date and hour received, and the condition of the container and the berries.

In making arrangements for experimental shipments, the growers were instructed that they need not give any more care or attention in picking, packing, and hauling the berries to be used in the experiments than was given ordinarily in handling the regular commercial shipments made by other means of transportation. Most of the

growers who cooperated in making the experimental shipments followed these instructions, but a few who had berries of extra size and quality and were vitally interested in the success of the experiment asked and were given permission to use special care in handling their shipments. Not enough of these special shipments were made to warrant conclusions, but the results secured indicate that uncertain weather conditions and possibilities of careless handling while in transit may tend to discourage the use of the parcel post for shipping the highest grade of fancy select berries, which require special care throughout the marketing process.

Because of heavy rains and hot weather during a large part of the strawberry shipping seasons of 1916 and 1917, conditions were unfavorable for shipping berries without refrigeration. However, shipments of strawberries were made by parcel post during the entire

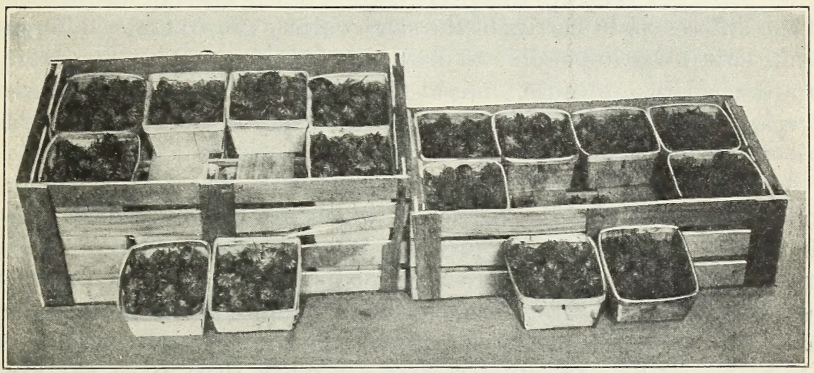

FIG. 1.—One 24-quart crate and one 16-quart crate of strawberries shipped by parcel post.

shipping seasons, as it was desired to make experimental shipments under varying conditions.

A large number of crates of berries were received in poor condition because of unfavorable weather conditions and delay in delivery. However, when the weather conditions were favorable, the berries that had been picked and packed properly arrived in good merchantable condition. Figure 1 shows two shipments of strawberries that were made under favorable conditions.

In 1915 a total of 118 crates of strawberries were received by parcel post, the fruit in all except 18 of these crates being received in good condition.

In 1916 over one-half of the shipments arrived in unsatisfactory condition, chiefly because of unfavorable weather conditions. The shipping season was marked by heavy rains, followed by hot, clear days, which caused the berries to soften and scald and made it difficult to ship them satisfactorily even under refrigeration.

During the first half of the strawberry shipping season in 1917 the weather conditions were favorable, but during the last half there were frequent rains and the nights were hot. Practically all of the shipments of strawberries that were made during the first half of the 1917 strawberry shipping season were received in very good condition, but nearly all of the shipments that were made during the last half of the season were received in unsatisfactory condition. The same methods of picking and packing the berries were practiced during the entire season, so it is evident that the difference in the condition of the berries when they were received was due almost entirely to weather conditions.

GENERAL CONSIDERATIONS.

An effort was made to ascertain the best shipping varieties of strawberries by making a special study of the shipping qualities of the different varieties that were mailed to the bureau, but because of the differences in berries of the same variety grown under different conditions it was impossible to draw any definite conclusions. Many growers had two or more kinds of strawberries in the same field and it was often difficult to determine the variety of a berry that was grown in these fields.

A grower who wishes to market strawberries direct to consumers should ship varieties the berries of which are naturally firm. Varieties with large green caps present a good appearance and often are preferred to berries which are superior in quality but which do not look so attractive. Growers should realize that consumers in buying farm produce judge quality largely by appearance, and that berries which present an attractive appearance when they reach the consumer usually will give the best satisfaction.

Many persons who market strawberries apparently do not realize that berries which are to be shipped should not be allowed to become as ripe as those which are to be used immediately. Because of weather conditions a grower can not always pick his berries at the proper time, but if strawberries are to be shipped by parcel post they should be entirely free from overripe fruit, as two or three overripe berries in each quart will cause considerable damage in such shipments and also will make the entire lot unattractive upon arrival at destination.

Berries which are water-soaked when they are picked or which have grown rapidly after a rain can not be shipped satisfactorily by parcel post. During hot weather, parcel-post shipments of strawberries usually arrive in poor condition as the berries become soft and crushed in transit. In such cases the berries are not attractive and must be used at once to prevent spoilage. The successful use of the parcel post for shipping strawberries is governed largely by weather conditions, and difficulty often results because of frequent rains and high humidity during the strawberry shipping season.

PICKING AND PACKING.

The treatment that is given strawberries in picking and handling in the field, and in packing, has much to do with the damage which occurs when they are shipped. Most growers are forced to employ unskilled laborers and children to pick berries, payment being made on the basis of the quantity picked. Unless considerable supervision is given to such labor, it is likely that berries of nearly all degrees of maturity will be placed in the baskets. When the berries are ripening very rapidly they should be picked every day so that there will be little opportunity for the fruit to become overripe.

During the periods when experimental shipments were made, it was noticed that some pickers placed in the baskets many berries that were picked without the caps. Berries from which the caps have been removed will not ship well, as they soon begin to spoil. Green and overripe berries also are included by careless pickers, especially where payment is based on the quantity rather than on the quality of the fruit picked. Children sometimes replace in baskets the berries which they pick up from overturned boxes. In such instances the berries usually are somewhat bruised and conditions for decay are encouraged. Grass and trash also are picked up with the fruit and their presence gives the berries an unattractive appearance.

Growers who wish to ship berries direct to consumers by parcel post should see that care is exercised in picking and handling the berries in the field in order to prevent the inclusion of both green and overripe berries which detract much from the appearance of a basket of the fruit.

Berries which are to be shipped by parcel post should not be handled after they are picked, and for this reason the supervision of the pickers in the field should be such as to favor the picking and packing of fruit of good marketable quality only.

Some growers permit the pickers to leave berries in the sun until a certain number of quarts have been picked. While a picker should not be required to take his berries to the packing shed too frequently, some method should be used which will get the berries out of the sun soon after they are picked. In carrying the berries from the field to the packing shed, care should be taken that the fruit is not bruised or in any way injured. The packing shed should be convenient to the field and should be well ventilated. The person packing the berries should see that the baskets are well filled as the berries will settle considerably while they are in transit. The baskets should be placed carefully in the crate while both the baskets and dividers should be in the proper place. In order to allow all the ventilation possible, the covers of the crates should not be closed until the berries are to be hauled to the station.

CONTAINERS.

Various kinds and sizes of containers were used in making the experimental shipments of strawberries. Some of the crates that were used are illustrated in figure 2.

Data obtained indicate that a crate which permits ventilation is necessary for shipping berries by parcel post. The crates which gave the best results were made with slatted sides and bottoms, and were provided with racks or dividers to separate each layer of baskets.

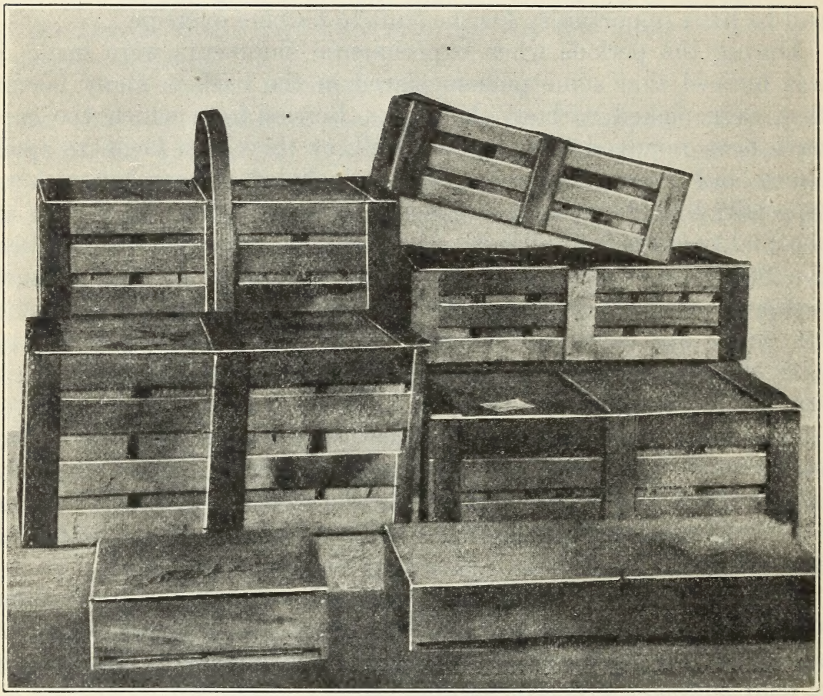

FIG. 2.—Various sizes and styles of crates used in making experimental shipments of berries and cherries.

Figure 3 shows all parts and the construction of a style of crate that gave satisfaction in experimental shipments.

The baskets used in these crates were the standard square berry baskets which are smaller at the bottom than at the top. This construction allows a circulation of air around each basket of fruit. Experiments were made with crates holding pint baskets as well as with those holding quart baskets. In a few instances the berries in the quart baskets arrived in better condition than those in the pint baskets, but in most cases no difference was noticed.

In nearly every shipment the berries in the top layer or tier of baskets were softer and had settled more than the berries in the other layer or layers. In the crates which were used the first season that

shipments were made, the top layer of baskets was not held in place as securely as the other layers and it was thought that the damage was caused by the top layer being shaken around more than the other layers. However, in the crates which were used the last two seasons, the berries in the top layer of baskets were softer and settled more than the berries in the other layers of baskets, notwithstanding the fact that the top layer of baskets was held securely in place. As the cover of the crate is solid and rests on the sides and ends of the crate, it seems certain that the damage to the berries in the top layer of baskets was due entirely to the fact that the top layer did not receive as much ventilation as the other layers. In some of the smaller crates which were used, space was provided for only one layer of baskets and in most of the shipments of berries that were received

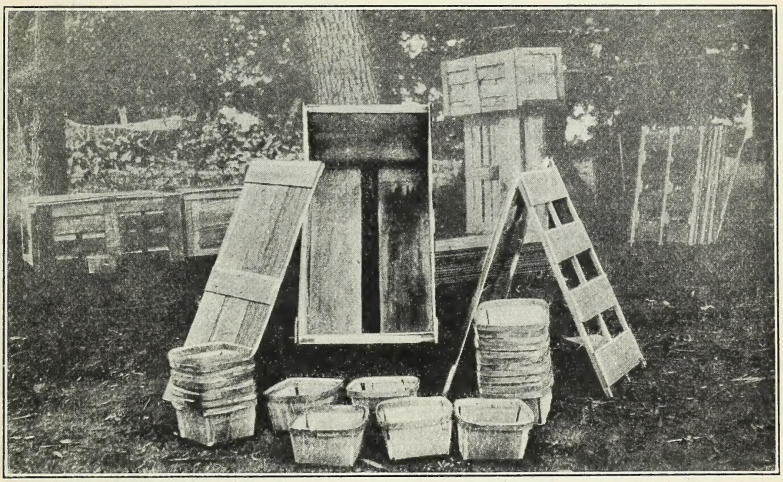

FIG. 3.—Ventilated crate. All parts shown; slatted sides, ends, bottom slats, covers, dividers, and baskets.

in these crates the berries in each basket were somewhat soft and settled. These facts indicate that ventilation is necessary for success in shipping strawberries by parcel post. No doubt many persons who have been unsuccessful in shipping strawberries by this method have used crates which do not allow ventilation.

Strawberries shipped in crates holding 16 quarts or more arrived in better condition than those shipped in smaller crates. Not only do large crates allow more ventilation than smaller crates, but they are doubtless handled more carefully in the mail. The use of crates holding less than 16 quarts can not be highly recommended for shipping strawberries by parcel post. This factor places a distinct limitation on the use of the parcel post for shipping strawberries, as many growers state that they have difficulty in obtaining customers who wish as many as 16 quarts of strawberries at one time. Persons who

wish to ship strawberries by parcel post should endeavor to get customers who will take a crate of berries and divide it among their neighbors.

Growers who send strawberries direct to consumers should always use clean, new crates and baskets in order that a good appearance will be presented. The crates need not be made of heavy material, but should be strong enough to carry the berries safely. A crate with slatted sides and bottoms made of material which does not split easily is the most satisfactory.

MAILING STRAWBERRIES.

A crate of strawberries or any other shipment which is sent by mail should bear the name and address of the sender, preceded by the word "From." This should be written legibly on the cover of the crate in the upper left hand corner. The full name and address of

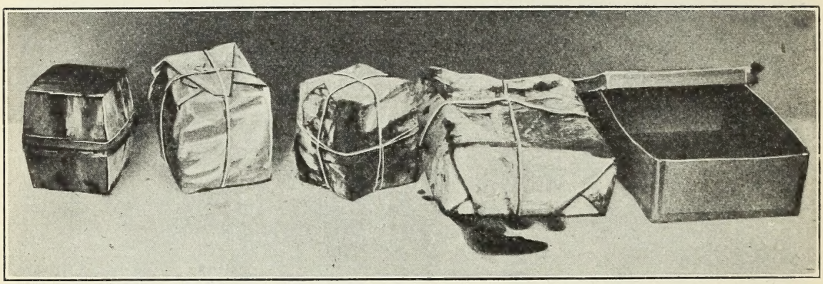

FIG. 4.—Unsatisfactory packages and methods of preparing berries for shipment by parcel post. Such packages do not allow ventilation and also do not comply with the regulations of the Post Office Department.

the person to whom the parcel is sent should be written legibly on the cover of the crate or if it is written on a tag, care should be exercised to fasten the tag securely to the crate. If the parcel is sent to a city, complete street address should be given. The crate should be marked "Perishable" so that it will be handled properly in the mail.

The regulations of the Post Office Department state that strawberries in parcels weighing less than 20 pounds will not be accepted for mailing unless they are inclosed in an inner cover and strong outer cover of wood, metal, heavy corrugated pasteboard, or other suitable material, and wrapped so that nothing can escape from the package. As previously stated, the results of the experimental shipments made by this bureau prove that berries can not be shipped satisfactorily when packed so that they will not receive ventilation. The packages and methods of wrapping that are illustrated in figure 4 should be avoided in making parcel post shipments.

If berries are sent in parcels weighing less than 20 pounds and are packed in accordance with the regulations of the Post Office Depart-

ment, absolutely no ventilation is allowed to the berries. Berries shipped in parcels weighing over 20 pounds are transported outside of mail bags, and this permits the use of a crate which allows ventilation. Parcels which weigh over 50 pounds can not be sent by parcel post to points outside of the third postal zone, but within the first, second, and third zones parcels weighing 70 pounds will be accepted for mailing. A 32-quart crate filled with strawberries weighs over 50 pounds if the baskets are filled.

Further information about postal regulations may be secured from any postmaster.

Persons who wish to ship strawberries by parcel post should obtain information relative to mail schedules in order to avoid taking them to the post office too long a time before mail is dispatched. Where it is practicable, berries should be mailed so that they will be transported at night and will arrive in the city in time to be delivered on the first delivery the following morning.

In hauling the berries to the post office a vehicle with good springs should be used so that the berries will not be crushed by jolting. A cover or shelter of some kind should be provided to protect the berries from the sun and dust.

At many post offices and stations, crates of berries receive poor treatment after they are presented for mailing. Facilities for handling large parcels at many post offices and for hauling them to and from trains often are very poor. Mail usually is taken to the depot about one-half hour before the mail train is due and during the berry shipping season trains are often late. While the experimental shipments of strawberries were being made, berries frequently were left in the sun at the depot for nearly an hour.

Whether berries shipped by parcel post will arrive in good condition or not depends also on the manner in which they are handled in the mail cars, at transfer points, and at the post offices to which they are sent. Persons who have been unable to ship strawberries satisfactorily by parcel post should endeavor to ascertain whether the difficulty lies in the picking and packing of the fruit or in the treatment given parcels while in transit.

ECONOMIC CONSIDERATIONS.

In many places crates holding less than 32 quarts can not be obtained, while few persons in cities wish to buy 32 quarts of berries at a time. Some firms which manufacture berry containers carry in stock crates having a capacity of less than 32 quarts and often they will make almost any size crate desired on special order.

A 16-quart ventilated crate, complete with baskets, usually costs from 19 to 25 cents, depending on the location of the grower and the quantity of crates which he buys at one time. The shipping weight

of a 16-quart crate of strawberries is from 27 to 31 pounds, and the postage to points within the first and second postal zones (approximately 150 miles) is from 31 to 35 cents. Therefore the cost of the crate and postage for shipping 16 quarts of strawberries is from 50 to 60 cents. The charges for postage will average about 2 cents per quart on a shipment of 16 quarts. For shipments of less than 16 quarts the cost per quart for both the crate and the postage will be relatively higher.

Whether or not a grower will profit by shipping strawberries by parcel post can be decided only by giving due consideration to all of the various factors entering into the proposition. Some of these factors are the cost of marketing by this method and the net returns to be realized as compared with the expense and profits incidental to other methods of marketing, the quantity of berries to be marketed, the location of the shipper with reference to his post office and his market, and the ability of the shipper to develop and maintain a mail-order business.

BLACKBERRIES.

During 1915 and 1916, 34 experimental shipments of blackberries were made by parcel post. Practically all of these shipments were made in crates with a capacity of 16 quarts. The blackberries were shipped an average of 162 miles, and an average of 22 hours elapsed between the time the berries were shipped and the time they were received. During a large part of these two seasons the weather was very unfavorable for shipping berries by parcel post. In a number of instances the berries were too ripe for shipping when they were picked. Seven shipments were received in good condition, 18 in fair condition, and, largely because of delay in delivery, 9 shipments were received in poor condition. The berries in 25 of the shipments were fit to use but in some instances were rather soft.

Most of the shipments in which the berries were received in poor condition were made in unventilated crates. In shipping blackberries by parcel post the use of ventilated crates is recommended, as the berries undoubtedly break down from lack of ventilation in crates made with solid sides. While berries shipped in unventilated containers may be fit for use on arrival at destination, they are usually soft and settled in the baskets and are unattractive in appearance.

If a grower wishes to ship blackberries by parcel post, he should exercise care in picking and packing the berries. Carelessness in picking and handling blackberries sometimes causes more injury to the fruit than does the treatment given while in transit. Success in shipping blackberries is dependent largely on favorable weather conditions and the way in which the fruit is handled in transit.

The shipping weight of a 16-quart crate of blackberries is from 27 to 30 pounds, and the charge for postage to points within the first and second postal zones is from 31 to 34 cents. The cost for crate and postage on a 16-quart crate of blackberries will vary, therefore, from 58 to 64 cents. It may be possible at times to ship

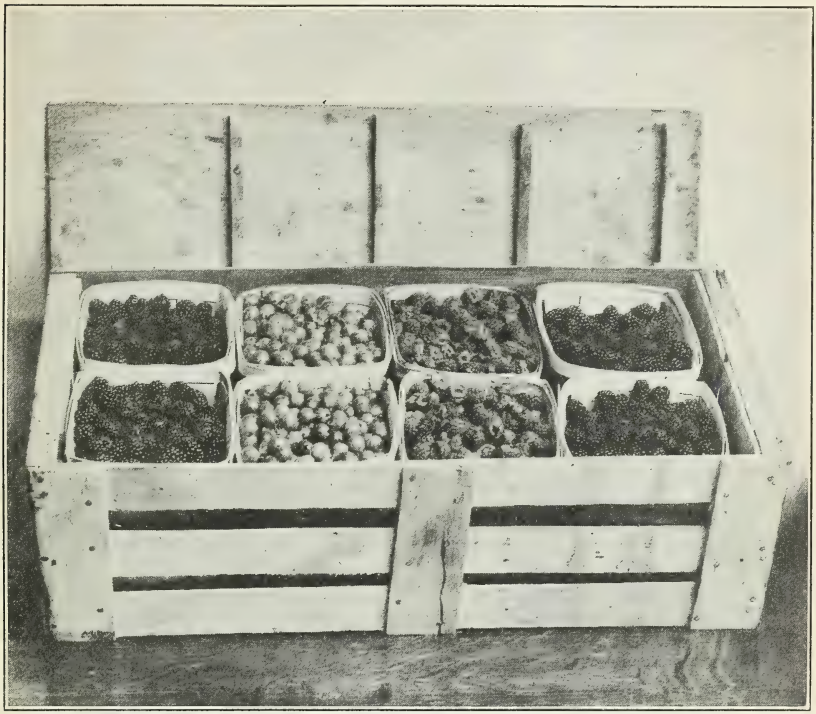

FIG. 5.—Combination shipment of blackberries, raspberries, and gooseberries. Where two or more kinds of berries are available such shipments may be desirable.

more than one kind of berries in a crate such as a combination shipment shown in figure 5.

Suggestions already made in relation to the shipping of strawberries are applicable to the shipping of blackberries.

BLUEBERRIES OR HUCKLEBERRIES.

Thirteen experimental shipments of huckleberries were made in 1915. In two of these shipments corrugated paper-board boxes with a capacity of 2 quarts were used, while the other shipments were made in ventilated crates with capacities of 8 and 16 quarts. The berries shipped in the corrugated paper-board boxes were received in poor condition, as both the berries and the containers were wet and crushed. The damage to the berries probably was caused by the lack of ventilation.

The berries shipped in ventilated crates were received in good condition, except that in a few instances they were somewhat wet. It was observed in shipping huckleberries that it was difficult to keep the berries from being spilled from the baskets. (See fig. 6.)

Baskets for shipping huckleberries are made with the veneer at the corners of the baskets lapped so that the berries can not escape from the bottom and sides of the basket. As the berries are small and nearly round, however, they roll easily from the top of the baskets unless something is provided as a cover, and such covering

FIG. 6.—Huckleberries shipped by parcel post in an 8-quart ventilated crate. This crate was badly stained by the berries spilled from the baskets in transit.

together with the lapped corners of the baskets allow little ventilation. A crate of huckleberries in which the baskets are not covered so that the berries can not escape must be transported right side up in order to keep the berries in place. Small parcels of berries often are not carried in this way in the mail and frequently larger crates of berries are placed on end or bottom side up.

Care must be exercised in shipping huckleberries by parcel post and unless particular attention is given to the selection of proper containers and the packing of the fruit, failure will result.

RASPBERRIES.

During 1915 and 1916 experimental shipments of raspberries to the number of 74 were made by parcel post. Nine of these shipments were of black raspberries and the others were of red raspberries. The berries were shipped in crates of various sizes and types. Pint baskets were used in most of the crates, although a few shipments were made in crates supplied with quart baskets. The crates in which pint baskets were used varied in capacity from 12 to 32 pints. The experimental shipments of raspberries were made over distances which averaged nearly 200 miles and an average of 18 hours elapsed between the time the berries were shipped and the time they were received.

Few of the shipments of raspberries were received in good condition. A number of shipments were received in fair condition and

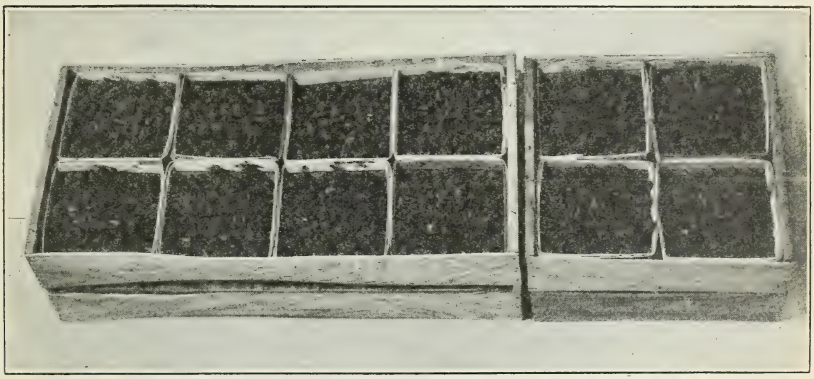

FIG. 7.—Black raspberries shipped by parcel post. One crate contained 16 quarts and the other held 8 quarts. These berries were picked at the proper degree of maturity and were shipped under favorable weather conditions.

the berries were fit for use although they were somewhat soft. In most of the shipments the berries were soft and crushed and in many of them the berries were moldy or had become sour.

It is necessary to use shallow containers of small capacity in the crates used for shipping these berries. Raspberries are of such a delicate texture and are of such a structure that they have a decided tendency to mass together and it is difficult to provide ventilation. The berries should be handled as little as possible after they are picked while crates containing raspberries should be handled very carefully. Parcels sent through the mail must, of necessity, be handled several times and doubtless this causes much damage to raspberries shipped by parcel post.

The cost of shipping raspberries by parcel post is slightly higher than that of shipping strawberries or blackberries because raspberries are shipped in pint baskets. A 32-pint crate complete with bas-

kets costs from 27 to 31 cents. The shipping weight of a 32-pint crate of raspberries is from 31 to 34 pounds and the postage to

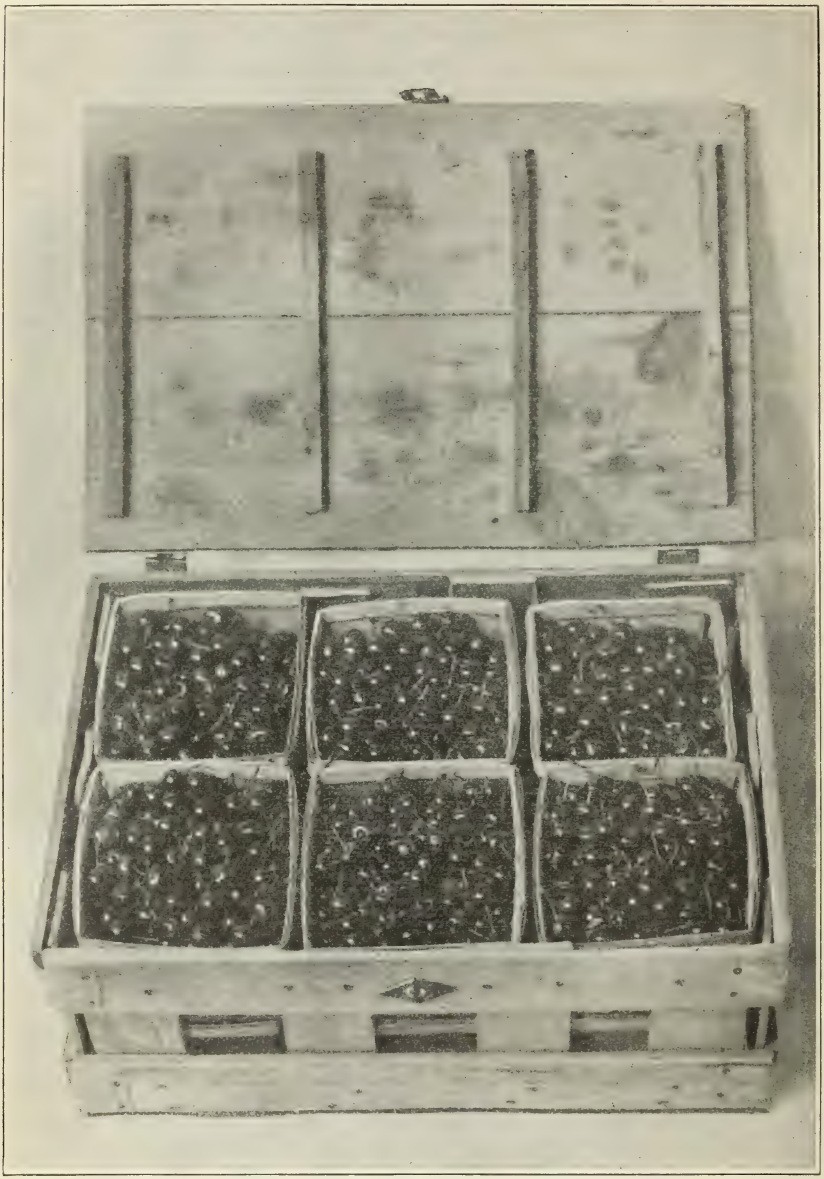

FIG. 8.—Cherries shipped over 100 miles by parcel post. This style crate, holding 12 quarts, is heavier than is necessary for shipments of this quantity of fruit.

points within the first and second postal zones is from 35 to 39 cents. Therefore, the cost of a crate and postage for shipping 32 pints of raspberries is from 62 to 70 cents.

The results of the experimental shipments of raspberries indicate that it is not advisable to ship raspberries by parcel post unless the berries are dry and firm when they are picked, are packed properly, are shipped under very favorable weather conditions and are carefully handled in the mail. As illustrated in figure 7 it is possible to ship raspberries satisfactorily by parcel post if all conditions are favorable. However, as a general proposition the use of the parcel post service for shipping raspberries can not be recommended.

CHERRIES.

During 1915, 1916, and 1917 experimental shipments of cherries to the number of 229 were made by parcel post in crates with a capacity

FIG. 9.—Cherries shipped by parcel post. The crate on the left contained 24 quarts and that on the right had a capacity of 16 quarts. Crates of this type usually are satisfactory for shipping cherries by parcel post.

of from 4 to 32 quarts. The shipments totaled 3,266 quarts of cherries. An average of 17 hours elapsed between the time the cherries were mailed and the time they were delivered. Practically all of the shipments were made over distances less than 150 miles.

Approximately 75 per cent of the shipments were received in a very satisfactory condition as no damage resulted from the treatment given them while in transit. Three of these shipments are illustrated in Figures 8 and 9.

From 2 to 5 per cent of the cherries in 15 per cent of the shipments were unfit for use, and in 10 per cent of the shipments one-tenth or more of the cherries were damaged when they were received. Nearly all of the cherries that were not received in good condition had been picked carelessly or had become too ripe before they were picked.

In some of the shipments there was included a quart of cherries which had been picked without the stems. In such cases, although there was scarcely any damage to the cherries picked with the stems, from 25 to 90 per cent of the cherries picked without the stems were damaged. A comparison of cherries shipped with stems and without stems is shown in figure 10.

Cherries from which the stems have been removed begin to decay quickly, as the removal of the stem causes a wound in the flesh of the fruit, which allows the entrance of fungi, which cause cherries to mold or decay. Growers should exercise care in picking and packing

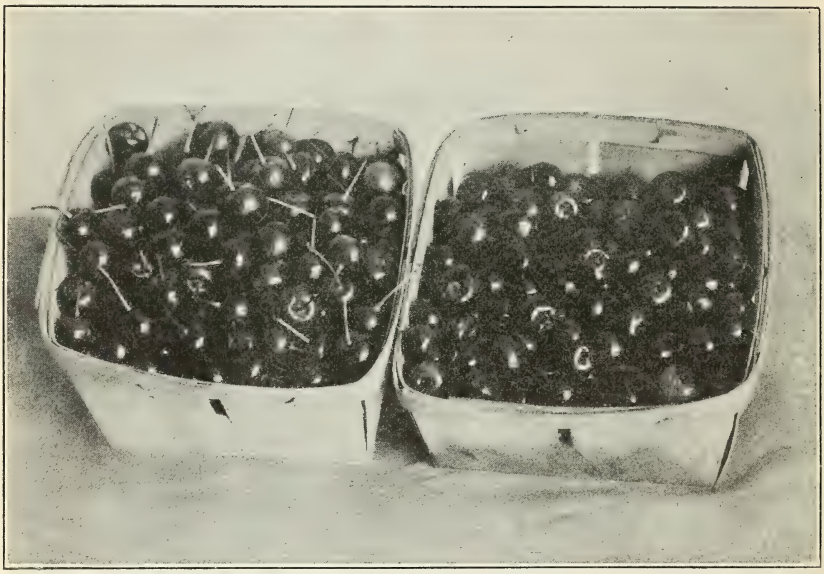

FIG. 10.—Cherries shipped with stems and without stems. The fruit in the basket on the left was picked and shipped with the stems and was received in good condition. That in the basket on the right was shipped with the stems removed. About 90 per cent of the cherries showed signs of decay where the flesh of the fruit had been injured by the removal of the stems.

cherries so that the skin of the fruit will be unbroken, otherwise they will reach the consumer in poor condition.

Cherries that are to be shipped by parcel post should be picked by grasping the stem and not the cherry, and many cherries should not be held in the hand at one time, as this will crush or bruise the fruit and allow the entrance of fungi, which will cause decay or mold. Care should be exercised in emptying the cherries from the vessel in which they are picked into the shipping container so as to avoid injury to the fruit.

For shipping cherries by parcel post, a ventilated crate such as is recommended for shipping strawberries by parcel post, should be used. The shipping weight of cherries is about the same as that of

strawberries, so that the cost of shipping them by parcel post is approximately the same as that of strawberries.

The results of the experimental shipments of cherries show it is practicable from a physical standpoint to ship this fruit by parcel post if it is picked in the proper condition and if care is exercised in picking, packing, and mailing. Whether or not it is practicable from an economic standpoint, depends upon the particular conditions in each case. The grower should compare the net returns that can be obtained by shipping cherries by parcel post with the net returns that can be realized by marketing through the regular channels, and then use the method by which he can obtain the greatest net profit.

OBTAINING AND RETAINING CUSTOMERS.

A grower who desires to develop a market for berries or cherries to be shipped by parcel post must, of course, secure customers and carry on the necessary business transactions. Many producers have friends and relatives in cities who would be glad to receive fruit direct from the grower. By securing friends or relatives as customers, a grower should be able to secure additional customers through their recommendations. In order to retain customers, produce of high quality and of good appearance must be furnished and the shipper must be prompt and businesslike in all his transactions.

Further information relative to securing customers and maintaining business relations will be found in Farmers' Bulletin No. 922, Parcel Post Business Methods.

SELECTED LIST OF PUBLICATIONS OF THE UNITED STATES DEPARTMENT OF AGRICULTURE OF INTEREST TO BERRY AND CHERRY GROWERS AND SHIPPERS.

AVAILABLE FOR FREE DISTRIBUTION BY THE DEPARTMENT.

Blackberry Culture. (Farmers' Bulletin 643.)
Strawberry Growing in the South. (Farmers' Bulletin 664.)
Suggestions for Parcel Post Marketing. (Farmers' Bulletin 703.)
Dewberry Culture. (Farmers' Bulletin 728.)
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